

SANTANA ATRIUM SENIOR APARTMENTS AIR QUALITY AND GHG EMISSIONS ASSESSMENT

Santa Clara, California

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Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) emission impacts associated with the proposed Santana Atrium senior apartments project in Santa Clara, California. We understand that the project proposes the construction of 90 apartments and parking on a 1.86-acre site located at 100 North Winchester Boulevard between Fernwood Avenue and Pruneridge Avenue. The surrounding land uses include single- and multi-family residences to the west and to the north of the project site. To the east of the project site, opposite South Winchester Boulevard, are single- and multi-family residences, as well as commercial retail. The site is currently developed with approximately 59,000 square feet (sf) of office uses that would be demolished under the conditions of the proposed project. Air quality and GHG emissions would occur due to temporary construction emissions and as a result of direct and indirect emissions from users of the new apartments. This analysis of air quality impacts was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).

The project applicant would commit to the following Best Management Practices as part of the project:

BMP AQ-1. Include measures to control dust emissions.

Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality and fugitive dust-related impacts associated with grading and new construction to a less than significant. The contractor shall implement the following Best Management Practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible and feasible. Building pads shall be laid as soon as possible and feasible, as well, after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

BMP AQ-2. Selection of equipment during demolition, grading and trenching construction phases to minimize emissions. Such equipment selection would include the following:

1. All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously shall meet U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent;
2. All diesel-powered portable equipment (i.e., air compressors, concrete saws, and forklifts) operating on the site for more than two days shall meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent; and
3. Minimize the number of hours that equipment will operate, including the use of idling restrictions.

Setting

The project is located in the northern portion of the Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}).

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM₁₀) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ and PM_{2.5} are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and Federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of diesel particulate matter (DPM). Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.¹ The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

Greenhouse Gases

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO₂) and water vapor but there are also several others, most importantly methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These are released into the earth's atmosphere through a variety of natural processes and human activities.

Sources of GHGs are generally as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion.
- N₂O is associated with agricultural operations such as fertilization of crops.
- CH₄ is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO₂ being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of equivalent CO₂ (CO₂e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (a part of the California

¹ Available online: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed: April 30, 2014.

Environmental Protection Agency) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.²

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These Thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in *California Building Industry Association (CBIA) v. BAAQMD* (Alameda Superior Court Case No. RGI0548693). The order requires BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds. However, this litigation remains pending as the California Supreme Court recently accepted a portion of CBIA's petition to review the appellate court's decision to uphold BAAQMD's adoption of the thresholds. The specific portion of the argument to be considered is in regard to whether CEQA requires consideration of the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment). Therefore, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project.

² Bay Area Air Quality Management District. 2011. BAAQMD CEQA Air Quality Guidelines. May.

Table 1. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO _x	54	54	10
PM ₁₀	82	82	15
PM _{2.5}	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million		
Chronic or Acute Hazard Index	1.0		
Incremental annual average PM _{2.5}	0.3 µg/m ³		
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per one million		
Chronic Hazard Index	10.0		
Annual Average PM _{2.5}	0.8 µg/m ³		
Greenhouse Gas Emissions			
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		
Note: ROG = reactive organic gases, NO _x = nitrogen oxides, PM ₁₀ = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.			

Impacts and Mitigation Measures

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan? *Less than significant*

The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* that was adopted by BAAQMD in September 2010. The proposed project would not conflict with the latest Clean Air planning efforts since (1) the project would have emissions below the BAAQMD thresholds (see Impact 2), (2) development of the project site would be considered urban “infill”, and (3) development would be near existing transit with regional connections. Net emissions from the project would not exceed any of the significance thresholds and, thus, it is not required to incorporate project-specific transportation control measures listed in the latest Clean Air Plan

Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? *Less than significant*

The Bay Area is considered a non-attainment area for ground-level ozone and fine particulate matter (PM_{2.5}) under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM₁₀) under the California Clean Air Act, but not the Federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM₁₀ and PM_{2.5} and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2013.2.2 was used to predict emissions from construction and operation of the site assuming full build out of the project. The project land use types and size, and trip generation rate were input to CalEEMod.

Construction period emissions

CalEEMod provided annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, vendor and haul truck traffic. The construction build-out scenario, including equipment list, was provided by the project applicant. It is expected that the project would take approximately 12 months to construct, beginning in 2017. Accordingly, the CalEEMod phasing schedule default was adjusted for a construction period of 12 months. As a balanced site, no substantial amount of soil import or export is expected. The anticipated 65,000 sf for building demolition, along with cement and asphalt truck trip estimates were entered into the model. *Attachment 1* includes the CalEEMod input and output values for construction emissions and the construction schedule and equipment list.

The proposed project land uses were input into CalEEMod, which included 90 residential units entered as “Apartments Low Rise,” 63 parking lot spaces, and 42 garage parking spaces entered as “Unenclosed Parking Structure” on a 1.86-acre site.

The modeling scenario assumes that the project would be built out over a period of approximately 12, beginning in 2017, or an estimated 260 construction workdays. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction of the project. As indicated in Table 2, predicted project emissions would not exceed the BAAQMD significance thresholds.

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of PM₁₀ and PM_{2.5}. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dust or mud on local streets, which could be an additional source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would also depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are employed to reduce these emissions. *BMP AQ-1 would implement BAAQMD-required best management practices.*

Table 2. Construction Period Emissions

Scenario	ROG	NO _x	PM ₁₀ Exhaust	PM _{2.5} Exhaust
2017 Construction emissions (tons)	1.29 tons	1.48 tons	0.09 tons	0.09 tons
Average daily emissions (pounds) ¹	9.9 lbs.	11.4 lbs.	0.7 lbs.	0.7 lbs.
BAAQMD Thresholds (pounds per day)	54 lbs.	54 lbs.	82 lbs.	54 lbs.
Exceed Threshold?	No	No	No	No

Note: ¹ Assumes 260 workdays.

Operational Period Emissions

Due to the project size, operational period emissions would be less than significant. In their 2011 update to the CEQA Air Quality Guidelines, BAAQMD identified the size of land use projects that could result in significant air pollutant emissions. For operational impacts, the project size was identified at 451 dwelling units. Since the project proposes 90 dwelling units, it is concluded that emissions would be below the BAAQMD significance thresholds for operational criteria pollutant emissions.

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? *Less than significant*

As discussed under Impact 2, the project would have emissions less than the significance thresholds adopted by BAAQMD for evaluating impacts related to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. The highest measured level over any 8-hour averaging period in the Bay Area during the last 3 years is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have hourly traffic volumes less than 10,000, which would be less than the

BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.³

Impact 4: Expose sensitive receptors to substantial pollutant concentrations? *Less than significant*

Sensitive receptors are locations where an identifiable subset of the general population (children, asthmatics, the elderly, and the chronically ill) that is at greater risk than the general population to the effects of air pollutants are likely to be exposed. These locations include residences, schools, playgrounds, childcare centers, retirement homes, hospitals, and medical clinics. Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels. Construction activity would generate dust and equipment exhausts on a temporary basis. There are nearby sources of air pollutant emissions, but they are not anticipated to adversely affect new project residents. Impacts from project construction and existing sources of air pollution are addressed.

Project Construction Activity

Construction activity is anticipated to involve demolition of the existing on-site buildings and building construction. As discussed under Impact 2, the project would have less-than-significant construction period emissions. While those thresholds primarily address the potential for emission to adversely affect regional air quality, localized emissions of dust or equipment exhaust could affect nearby sensitive land uses. During demolition and construction activities, dust would be generated. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions and meteorological conditions. Typical winds during late spring through summer are from the north. Nearby land uses could be adversely affected by dust generated during construction activities. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are employed to reduce these emissions. *BMP Measure AQ-1 would implement BAAQMD-required best management practices.*

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. Diesel exhaust poses both a health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors from construction emissions of diesel particulate matter DPM.⁴ A dispersion model was used to predict the off-site DPM concentrations resulting from project construction at sensitive receptors so that lifetime cancer risks could be predicted. The Best Management Practices identified above in the Introduction were accounted for in modeling. The closest off-site sensitive receptors are residences adjacent to the southern boundary of the project site. Additional residences are located at farther distances in all directions from the site. Figure 1 shows the project site and sensitive receptor locations (residences) used in the air quality dispersion modeling analysis where potential health impacts were evaluated.

Construction Emissions

The community risk assessment focused on modeling on-site construction activity. Construction period emissions were modeled using CalEEMod. The CalEEMod model provided total annual PM_{2.5} exhaust

³ For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

⁴ DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

emissions (assumed to be diesel particulate matter) for the off-road construction equipment and for exhaust emissions from on-road vehicles (haul trucks, vendor trucks and worker vehicles), with total emissions of 0.013 tons (26 pounds) with BMPs incorporated. The on-road emissions are a result of haul truck travel, worker travel, and vendor deliveries during construction activities. A trip length of 0.5 miles was used to represent vehicle travel while at or near the construction site. Emissions from on-road vehicles traveling at or near the site were modeled as occurring at the construction site. Fugitive PM_{2.5} dust emissions were calculated by CalEEMod as 0.008 (16 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and PM_{2.5} concentrations at existing sensitive receptors in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling these types of emission activities for CEQA projects.⁵ Emission sources for the construction site were grouped into two categories, exhaust emissions of DPM and fugitive PM_{2.5} dust emissions. The AERMOD modeling utilized two area sources to represent the on-site construction emissions, one for DPM exhaust emissions and the other for fugitive PM_{2.5} dust emissions. For the exhaust emissions from construction equipment, an emission release height of six meters was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive PM_{2.5} emissions, a near-ground level release height of two meters was used for the area source. Emissions from vehicle travel around the project site were included in the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. and 4 p.m. when the majority of the construction activity involving equipment usage would occur.

The modeling used a five-year data set (2006 - 2010) of hourly meteorological data from the San Jose Airport that was prepared by the BAAQMD for use with the AERMOD model. Annual DPM and PM_{2.5} concentrations from construction activities in 2017 were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby residential receptors at a receptor height of 1.5 meters (4.9 feet).

Predicted Cancer Risk and Hazards

The maximum modeled DPM and PM_{2.5} concentrations occurred at a receptor adjacent to the southern project boundary. The location of this receptor is identified on Figure 1. Increased cancer risks were calculated using the modeled DPM concentrations and BAAQMD-recommended risk assessment methods for both a child exposure (3rd trimester through 2 years of age) and adult exposure.⁶ The cancer risk calculations were based on applying the BAAQMD-recommended age sensitivity factors to the DPM exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations.⁷ Infant and child exposures were assumed to occur at all residences during the entire construction period.

Results of this assessment indicate that for project construction the maximum residential child increased cancer risk would be 4.2 in one million and the increased residential adult cancer risk would be 0.2 in one

⁵ Bay Area Air Quality Management District (BAAQMD), 20120. *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

⁶ Bay Area Air Quality Management District (BAAQMD), 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.

⁷ Bay Area Air Quality Management District (BAAQMD), 2010. *Air Toxics NSR Program Health Risk Screening Analysis Guidelines*. January.

million. The maximum increased child cancer risk would be below the BAAQMD significance threshold of a cancer risk of 10 in one million or less, and would be considered a *less-than-significant impact*.

The maximum modeled annual PM_{2.5} concentration was 0.10 micrograms per cubic meter (µg/m³) occurring at the same location where the maximum DPM concentration would occur. This PM_{2.5} concentration is below the BAAQMD significance threshold of 0.3 µg/m³ used to judge the significance of health impacts from PM_{2.5}. This would be considered a *less-than-significant impact*.

Potential non-cancer health effects due to chronic exposure to DPM were also evaluated. Non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). California's Office of Environmental Health and Hazards (OEHHA) has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The chronic inhalation REL for DPM is 5 µg/m³. The maximum modeled annual DPM concentration was 0.05 µg/m³, which is much lower than the REL. The maximum computed hazard index based on this DPM concentration is 0.01 which is much lower than the BAAQMD significance criterion of a hazard index greater than 1.0. This would be considered a *less than significant impact*.

Attachment 1 includes the emission calculations used for the area source modeling, summary of dispersion model inputs and outputs, and the cancer risk calculations.

Figure 1 – Project Construction Site, Residential Receptor Locations, and Location of Maximum Cancer Risk



Project Operation

Operation of this residential project is not considered a source of TAC or PM_{2.5} emissions. As a result, the project operation would not cause emissions that expose sensitive receptors to unhealthy air pollutant levels. Because the project would not be a source of TACs, it would not contribute cumulatively to unhealthy exposure to TACs.

The project would include new sensitive receptors. Substantial sources of air pollution can adversely affect sensitive receptors proposed as part of new projects. A review of the area indicates that there are roadways within 1,000 feet of the site that could adversely affect new residences. There are no BAAQMD-permitted stationary sources of air pollution within 1,000 feet of the project. There are thresholds that address both the impact of single and combined TAC sources upon projects that include new sensitive receptors. The analysis of the local surface streets used screening data provided by BAAQMD to identify the potential cancer risk and PM_{2.5} exposure risks.

Impacts from Local Surface Streets

Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. For roadways, BAAQMD has published screening tables and data to determine if roadways with traffic volumes of over 10,000 vehicles per day may have a significant effect on a proposed project. According to the Santa Clara General Plan traffic forecasts,⁸ N. Winchester Boulevard adjacent to the project has a future 2035 volume of 25,330 average daily traffic (ADT). Using the BAAQMD *Roadway Screening Analysis Table* for Santa Clara County for north-south directional roadways and at a distance of 10 feet and traffic volume of 30,000 ADT or less, estimated cancer risk from N. Winchester Boulevard at the project site would be 6.3 in one million, which is below the BAAQMD community risk significance threshold of 10 in one million. The estimated PM_{2.5} concentration of 0.24 µg/m³ and a HI of less than 0.03 associated with this source would be below the BAAQMD community risk significance thresholds, as well. This would be considered a *less-than-significant* impact.

According to the Santa Clara General Plan traffic forecasts, Pruneridge Avenue in the vicinity of the project has a future 2035 volume of 22,561 ADT. Using the BAAQMD *Roadway Screening Analysis Table* for Santa Clara County for east-west directional roadways and at a distance of 350 feet and traffic volume of 30,000 ADT or less, estimated cancer risk from Pruneridge Avenue at the project site would be 2.6 in one million, which is below the BAAQMD community risk significance threshold of 10 in one million. The estimated PM_{2.5} concentration of 0.10 µg/m³ and a HI of less than 0.03 associated with this source would be below the BAAQMD community risk significance thresholds, as well. This would be considered a *less-than-significant* impact.

Combined Community Risk Impacts

Based on screening data provided by BAAQMD for N. Winchester Boulevard and Pruneridge Avenue, the combination of exposures would result in excess cancer risks of 8.9 per million, PM_{2.5} exposures of 0.34 µg/m³ and a Hazard Index well below 1.0. These exposures are below the combined source thresholds of significance identified by BAAQMD (Combined Cancer Risk threshold: an excess cancer risk level of more than 100 in one million or a chronic non-cancer hazard index greater than 10.0. Cumulative PM_{2.5} threshold: 0.8 µg/m³ annual average PM_{2.5}).

⁸ City of Santa Clara, 2010. *City of Santa Clara 2010-2035 General Plan*. November.

Impact 5: Create objectionable odors affecting a substantial number of people? *Less-than-significant*

The project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. The project would not include any sources of significant odors that would cause complaints from surrounding uses. This would be a *less-than-significant* impact.

Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than significant*

The project would require a General Plan amendment and, therefore, project GHG emissions were quantified and compared to the established significance thresholds. The BAAQMD May 2011 CEQA Guidelines included GHG emissions-based significance thresholds. These thresholds include a “bright-line” emissions level of 1,100 metric tons (MT) CO₂e per year for land-use type projects and 10,000 MT CO₂e per year for stationary sources. Land use projects with emissions above the 1,100 MT CO₂e per year threshold would then be subject to a GHG efficiency threshold of 4.6 MT CO₂e per year per capita. Projects with emissions above the thresholds would be considered to have an impact, which, cumulatively, would be significant.

CalEEMod Modeling

CalEEMod was also used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model. The use of this model for evaluating emissions from land use projects is recommended by the BAAQMD. Unless otherwise noted below, the CalEEMod model defaults for Santa Clara County were used. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in *Attachment 1*.

Land Use Descriptions

The proposed project land uses were input into CalEEMod, which included 90 residential units entered as “Apartments Low Rise,” 63 parking lot spaces, and 42 garage parking spaces entered as “Unenclosed Parking Structure” on a 1.86-acre site. An Existing run was also conducted for 59,000 sf of “General Office Building,” as shown in the project traffic report.

Trip Generation Rates

CalEEMod allows the user to enter specific trip generation rates, which were input to the model using the daily trip numbers provided in the project traffic report. The default trip lengths and trip types specified by CalEEMod were used. Existing trip generation was also obtained from the project traffic report.

Model Year

The model uses mobile emission factors from the California Air Resources Board’s EMFAC2011 model. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. The year 2018 was analyzed since it is the first full year that the built-out project could conceivably be occupied. The Existing run conservatively used the year 2018 as well.

Energy

Emissions rates associated with electricity consumption were adjusted to account for Silicon Valley Power utility's (SVP) CO₂ intensity rate. CalEEMod uses a default rate of 641.35 pounds of CO₂ per megawatt of electricity produced. The current SVP CO₂ intensity rate of 524 pounds of CO₂ per megawatt of electricity produced was obtained from SVP and used in CalEEMod modeling.⁹

The 2013 Title 24 Building Standards became effective July 1, 2014 and are predicted to use 25 percent less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards that CalEEMod incorporates.¹⁰ Therefore, the CalEEMod run was adjusted to account for the greater energy efficiency.

Other Inputs

Default model assumptions for GHG emissions associated with area sources, solid waste generation and water/wastewater use were applied to the project. No new wood-burning fireplaces are allowed in the Bay Area, but it was assumed that new residences could include gas-powered fireplaces.

Construction Emissions

GHG emissions associated with construction were computed to be 247 MT of CO₂e, anticipated to occur over the entire construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted Threshold of Significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include, but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project. In 2018, annual net emissions resulting from operation of the proposed project are predicted to be -400 MT of CO₂e. That is, future project emissions are predicted to be less than that of existing emissions from the office uses. These emissions would not exceed the BAAQMD threshold of 1,100 MT of CO₂e/yr and, therefore, *this would be considered a less-than-significant impact.*

⁹ Personal correspondence between Jan Pepper, Electric Division Manager, Silicon Valley Power, and Joshua Carman, Illingworth & Rodkin, Inc., October 31, 2014.

¹⁰ California Energy Commission, 2012. *2013 Building Energy Efficiency Standards FAQ*. May.

Table 5. Annual Project GHG Emissions (CO₂e) in Metric Tons

Source Category	Existing Emissions	2018 Project Emissions
Area	<1	5
Energy Consumption	332	131
Mobile	448	264
Solid Waste Generation	25	19
Water Usage	32	18
Project		437
Existing	837	
Net Project Total		-400
BAAQMD Threshold		1,100 MT CO ₂ e/year

Impact: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? **No Impact.**

The project would be subject to new requirements under rule making developed at the State and local level, regarding greenhouse gas emissions and be subject to local policies that may regulate emissions of greenhouse gases.

Attachment 1: CalEEMod Input and Output Worksheets, Construction Schedule, and Risk Calculations

Project Name: 100 No Winchester, Santa Clara, CA					
Construction Phase	Equipment (See next page for example of commonly used equipment)	Quantity	Average Hours Used Per Day	How Many Work Days	Fuel Type - if other than Diesel
Demolition Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Concrete/Industrial Saws Excavators Tractors/Loaders/Backhoes Rubber-Tired Dozers 	2-5	6	20	
		2	6	20	
		2	6	20	
		1	6	20	
Site Preparation Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Excavators Tractors/Loaders/Backhoes Rubber-Tired Dozers 	2	6	10	
		1	6	10	
		1	6	10	
Grading/Excavation Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Excavators Tractors/Loaders/Backhoes Rubber-Tired Dozers 	1	6	10	
		1	6	10	
		1	6	10	
Trenching Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Excavators Tractors/Loaders/Backhoes 	1	6	5	
		1	6	5	
Building – Exterior Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Forklifts Cranes Air Compressors 	1	8	20	
		1	8	20	
		2-5	8	20	
Building – Interior/ Architectural Coating Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Air Compressors 	2-5	8	60	
Paving Start Date: _____ End Date: _____	<ul style="list-style-type: none"> Paving Equipment Rollers Tractors/Loaders/Backhoes 	1	6	5	
		1	6	5	
		1	6	5	
OTHER – Provide as Applicable					
Soil Hauling Volume	Export volume = <input type="text"/> cubic yards? Unknown at this time Import volume = <input type="text"/> cubic yards? Unknown at this time				
Demolition Volume	Square footage of buildings to be demolished, or total tons to be hauled. = <input type="text"/> 65,000 square feet or = <input type="text"/> hauling volume (tons)				

Project Name: 100 No Winchester, Santa Clara, CA					
Construction Phase	Equipment (See next page for example of commonly used equipment)	Quantity	Average Hours Used Per Day	How Many Work Days	Fuel Type - if other than Diesel
	Pavement demolished and hauled = <input type="text"/> tons				
Power	Line Power (Y/N) <input type="text"/> Y <input type="text"/> or Generator use (Y/N) <input type="text"/> N <input type="text"/> ? If generator use, then fuel type (diesel/gasoline/propane) <input type="text"/>				
Cement	Cement Trucks = <input type="text"/> Total Round-Trips OR Cement = <input type="text"/> 50 <input type="text"/> cubic yards				
Asphalt	<input type="text"/> 200 <input type="text"/> cy or <input type="text"/> round trips				

Example of Equipment Commonly Used for Each Construction Phase
Demolition
Concrete/Industrial Saws
Excavators
Rubber-Tired Dozers
Site Preparation
Rubber Tired Dozers
Tractors/Loaders/Backhoes
Grading / Excavation
Excavators
Graders
Scrapers
Rubber Tired Dozers
Tractors/Loaders/Backhoes
Trenching
Excavator
Tractor/Loader/Backhoe
Building - Exterior
Cranes
Forklifts
Generator Sets
Tractors/Loaders/Backhoes
Welders
Building – Interior/ Architectural Coating
Air Compressors
Aerial Lift
Paving
Cement and Mortar Mixers
Pavers
Paving Equipment
Rollers
Tractors/Loaders/Backhoes

Winchester Senior Housing Apartments Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	90.00	Dwelling Unit	1.86	140,464.00	257
Unenclosed Parking Structure	42.00	Space	0.00	16,800.00	0
Parking Lot	63.00	Space	0.00	25,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	524	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Using SVP CO2 intensity factor.

Land Use - Lot acreage and sf from project plan drawings.

Construction Phase - Approx. 12 month schedule

Off-road Equipment - Proposed equipment list provided by project applicant.

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Demolition - 65,000 sf building demo

Trips and VMT - Bldg constr: 50 cy cement (@ 16cy/truck) = 8 trips. Paving: 200 cy asphalt = 26 trips. Bldg Constr & Paving haul trips assumed to have vendor trip length.

Vehicle Trips - Using project trip rate.

Woodstoves - No woodstoves, possible gas-powered fireplaces.

Energy Use - 2013 Title 24 standards and lighting 25% more eneergy-efficient than 2008 standards.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	60.00
tblConstructionPhase	NumDays	4.00	10.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	PhaseEndDate	5/17/2017	12/29/2017
tblConstructionPhase	PhaseEndDate	11/22/2017	11/10/2017
tblConstructionPhase	PhaseEndDate	2/24/2017	2/15/2017
tblConstructionPhase	PhaseEndDate	1/5/2018	11/17/2017
tblConstructionPhase	PhaseEndDate	11/17/2017	2/22/2017
tblConstructionPhase	PhaseStartDate	2/23/2017	10/7/2017
tblConstructionPhase	PhaseStartDate	2/16/2017	2/6/2017
tblConstructionPhase	PhaseStartDate	2/11/2017	2/2/2017
tblConstructionPhase	PhaseStartDate	12/30/2017	11/12/2017
tblConstructionPhase	PhaseStartDate	1/28/2017	1/29/2017
tblConstructionPhase	PhaseStartDate	11/11/2017	2/16/2017
tblEnergyUse	LightingElect	810.36	607.77
tblEnergyUse	T24E	236.91	177.68
tblEnergyUse	T24NG	8,283.47	6,212.60
tblFireplaces	FireplaceWoodMass	92.40	0.00
tblFireplaces	NumberGas	49.50	90.00
tblFireplaces	NumberNoFireplace	27.90	0.00
tblFireplaces	NumberWood	12.60	0.00

tblGrading	AcresOfGrading	0.00	1.50
tblGrading	AcresOfGrading	0.00	1.00
tblLandUse	LandUseSquareFeet	90,000.00	140,464.00
tblLandUse	LotAcreage	5.63	1.86
tblLandUse	LotAcreage	0.38	0.00
tblLandUse	LotAcreage	0.57	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	6.00	0.80

tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	524
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	26.00
tblVehicleTrips	ST_TR	7.16	3.44
tblVehicleTrips	SU_TR	6.07	3.44
tblVehicleTrips	WD_TR	6.59	3.44
tblWoodstoves	NumberCatalytic	0.45	0.00
tblWoodstoves	NumberNoncatalytic	0.45	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2017	1.2878	1.4763	1.6542	2.9500e-003	0.1745	0.0875	0.2620	0.0556	0.0851	0.1407	0.0000	246.2675	246.2675	0.0256	0.0000	246.8056
Total	1.2878	1.4763	1.6542	2.9500e-003	0.1745	0.0875	0.2620	0.0556	0.0851	0.1407	0.0000	246.2675	246.2675	0.0256	0.0000	246.8056

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8419	7.8200e-003	0.6740	4.0000e-005		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	5.4203	5.4203	1.1700e-003	8.0000e-005	5.4694
Energy	4.2300e-003	0.0361	0.0154	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	130.7637	130.7637	5.7200e-003	1.7900e-003	131.4373
Mobile	0.1611	0.3411	1.5667	3.5600e-003	0.2565	4.5800e-003	0.2611	0.0686	4.2200e-003	0.0728	0.0000	263.7889	263.7889	0.0104	0.0000	264.0071
Waste						0.0000	0.0000		0.0000	0.0000	8.4038	0.0000	8.4038	0.4967	0.0000	18.8335
Water						0.0000	0.0000		0.0000	0.0000	1.8603	10.6168	12.4772	0.1917	4.6300e-003	17.9384
Total	1.0073	0.3851	2.2561	3.8300e-003	0.2565	0.0115	0.2680	0.0686	0.0111	0.0797	10.2642	410.5897	420.8538	0.7056	6.5000e-003	437.6857

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/29/2017	2/10/2017	5	10	
3	Grading	Grading	2/2/2017	2/15/2017	5	10	
4	Building Construction	Building Construction	2/6/2017	11/10/2017	5	200	

5	Trenching	Trenching	2/16/2017	2/22/2017	5	5
6	Architectural Coating	Architectural Coating	10/7/2017	12/29/2017	5	60
7	Paving	Paving	11/12/2017	11/17/2017	5	5

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 284,440; Residential Outdoor: 94,813; Non-Residential Indoor: 26,334; Non-Residential Outdoor: 8,778 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	5	6.00	81	0.73
Demolition	Rubber Tired Dozers	1	6.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	0	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Generator Sets	0	8.00	84	0.74
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	0.80	226	0.29
Building Construction	Forklifts	1	0.80	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	6.00	125	0.42
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	5	8.00	78	0.48
Grading	Graders	0	6.00	174	0.41
Paving	Paving Equipment	1	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	1	6.00	255	0.40

Building Construction	Welders	0	8.00	46	0.45
Demolition	Excavators	2	6.00	162	0.38
Site Preparation	Excavators	2	6.00	162	0.38
Grading	Excavators	1	6.00	162	0.38
Building Construction	Air Compressors	5	0.80	78	0.48
Trenching	Excavators	1	6.00	162	0.38
Trenching	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	25.00	0.00	296.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	82.00	17.00	8.00	12.40	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	26.00	12.40	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	16.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0320	0.0000	0.0320	4.8400e-003	0.0000	4.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0409	0.3650	0.3026	4.3000e-004		0.0225	0.0225		0.0216	0.0216	0.0000	38.0868	38.0868	7.2700e-003	0.0000	38.2394
Total	0.0409	0.3650	0.3026	4.3000e-004	0.0320	0.0225	0.0545	4.8400e-003	0.0216	0.0265	0.0000	38.0868	38.0868	7.2700e-003	0.0000	38.2394

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8800e-003	0.0396	0.0322	1.1000e-004	2.5000e-003	5.1000e-004	3.0100e-003	6.9000e-004	4.7000e-004	1.1500e-003	0.0000	9.9669	9.9669	7.0000e-005	0.0000	9.9684
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	1.1700e-003	0.0114	3.0000e-005	2.2800e-003	2.0000e-005	2.2900e-003	6.1000e-004	2.0000e-005	6.2000e-004	0.0000	1.9289	1.9289	1.0000e-004	0.0000	1.9310
Total	3.7100e-003	0.0408	0.0436	1.4000e-004	4.7800e-003	5.3000e-004	5.3000e-003	1.3000e-003	4.9000e-004	1.7700e-003	0.0000	11.8958	11.8958	1.7000e-004	0.0000	11.8994

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0231	0.0000	0.0231	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3800e-003	0.0912	0.0720	8.0000e-005		4.6500e-003	4.6500e-003		4.2700e-003	4.2700e-003	0.0000	7.8796	7.8796	2.4100e-003	0.0000	7.9303
Total	8.3800e-003	0.0912	0.0720	8.0000e-005	0.0231	4.6500e-003	0.0278	0.0125	4.2700e-003	0.0167	0.0000	7.8796	7.8796	2.4100e-003	0.0000	7.9303

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.3000e-004	2.2700e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3858	0.3858	2.0000e-005	0.0000	0.3862
Total	1.7000e-004	2.3000e-004	2.2700e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3858	0.3858	2.0000e-005	0.0000	0.3862

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0100e-003	0.0760	0.0591	6.0000e-005		3.9000e-003	3.9000e-003		3.5900e-003	3.5900e-003	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586
Total	7.0100e-003	0.0760	0.0591	6.0000e-005	0.0234	3.9000e-003	0.0273	0.0125	3.5900e-003	0.0161	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.9000e-004	1.8200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3086	0.3086	2.0000e-005	0.0000	0.3090
Total	1.3000e-004	1.9000e-004	1.8200e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3086	0.3086	2.0000e-005	0.0000	0.3090

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0307	0.2409	0.1646	2.7000e-004		0.0165	0.0165		0.0161	0.0161	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564
Total	0.0307	0.2409	0.1646	2.7000e-004		0.0165	0.0165		0.0161	0.0161	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	4.4000e-004	7.1000e-004	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1023	0.1023	0.0000	0.0000	0.1023
Vendor	0.0177	0.1520	0.2118	4.0000e-004	0.0110	2.2000e-003	0.0132	3.1500e-003	2.0200e-003	5.1700e-003	0.0000	36.1327	36.1327	2.8000e-004	0.0000	36.1386

Worker	0.0273	0.0385	0.3726	8.6000e-004	0.0747	5.7000e-004	0.0752	0.0199	5.3000e-004	0.0204	0.0000	63.2684	63.2684	3.2100e-003	0.0000	63.3359
Total	0.0451	0.1909	0.5851	1.2600e-003	0.0857	2.7800e-003	0.0884	0.0230	2.5500e-003	0.0256	0.0000	99.5035	99.5035	3.4900e-003	0.0000	99.5768

3.6 Trenching - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	0.0133	0.0109	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	1.4644	1.4644	4.5000e-004	0.0000	1.4739
Total	1.2700e-003	0.0133	0.0109	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	1.4644	1.4644	4.5000e-004	0.0000	1.4739

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0965	0.0965	0.0000	0.0000	0.0966
Total	4.0000e-005	6.0000e-005	5.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0965	0.0965	0.0000	0.0000	0.0966

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0803					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0665	0.4370	0.3736	5.9000e-004		0.0347	0.0347		0.0347	0.0347	0.0000	51.0651	51.0651	5.3900e-003	0.0000	51.1783
Total	1.1468	0.4370	0.3736	5.9000e-004		0.0347	0.0347		0.0347	0.0347	0.0000	51.0651	51.0651	5.3900e-003	0.0000	51.1783

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-003	2.2500e-003	0.0218	5.0000e-005	4.3700e-003	3.0000e-005	4.4000e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7035	3.7035	1.9000e-004	0.0000	3.7075
Total	1.6000e-003	2.2500e-003	0.0218	5.0000e-005	4.3700e-003	3.0000e-005	4.4000e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.7035	3.7035	1.9000e-004	0.0000	3.7075

3.8 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0172	0.0130	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.7100e-003	0.0172	0.0130	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	1.4400e-003	2.2900e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3325	0.3325	0.0000	0.0000	0.3325
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	9.0000e-005	9.1000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1543	0.1543	1.0000e-005	0.0000	0.1545
Total	2.3000e-004	1.5300e-003	3.2000e-003	0.0000	2.6000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.4868	0.4868	1.0000e-005	0.0000	0.4870

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Unmitigated	0.1611	0.3411	1.5667	3.5600e-003	0.2565	4.5800e-003	0.2611	0.0686	4.2200e-003	0.0728	0.0000	263.7889	263.7889	0.0104	0.0000	264.0071

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	309.60	309.60	309.60	691,141	691,141
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking Structure	0.00	0.00	0.00		
Total	309.60	309.60	309.60	691,141	691,141

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unenclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	88.9289	88.9289	4.9200e-003	1.0200e-003	89.3479
NaturalGas Unmitigated	4.2300e-003	0.0361	0.0154	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8348	41.8348	8.0000e-004	7.7000e-004	42.0894

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	783954	4.2300e-003	0.0361	0.0154	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8348	41.8348	8.0000e-004	7.7000e-004	42.0894
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		4.2300e-003	0.0361	0.0154	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8348	41.8348	8.0000e-004	7.7000e-004	42.0894

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	307790	73.1563	4.0500e-003	8.4000e-004	73.5010

Parking Lot	22176	5.2708	2.9000e-004	6.0000e-005	5.2957
Unenclosed Parking Structure	44184	10.5018	5.8000e-004	1.2000e-004	10.5512
Total		88.9289	4.9200e-003	1.0200e-003	89.3479

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.8419	7.8200e-003	0.6740	4.0000e-005		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	5.4203	5.4203	1.1700e-003	8.0000e-005	5.4694

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1080					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.4000e-004	0.0000	2.0000e-005	0.0000		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	4.3268	4.3268	8.0000e-005	8.0000e-005	4.3531
Landscaping	0.0208	7.8200e-003	0.6740	4.0000e-005		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	1.0935	1.0935	1.0900e-003	0.0000	1.1163

Total	0.8419	7.8200e-003	0.6740	4.0000e-005		3.9800e-003	3.9800e-003		3.9800e-003	3.9800e-003	0.0000	5.4203	5.4203	1.1700e-003	8.0000e-005	5.4694
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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	12.4772	0.1917	4.6300e-003	17.9384

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	5.86386 / 3.69678	12.4772	0.1917	4.6300e-003	17.9384
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		12.4772	0.1917	4.6300e-003	17.9384

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	8.4038	0.4967	0.0000	18.8335

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	41.4	8.4038	0.4967	0.0000	18.8335
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		8.4038	0.4967	0.0000	18.8335

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Winchester Senior Housing Apartments - Existing

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	59.00	1000sqft	1.86	59,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	524	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Using SVP CO2 intensity factor.

Land Use - Lot acreage and sf from project plan drawings.

Vehicle Trips - Project trip rate = CalEEMod (ITE) default.

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.35	1.86
tblProjectCharacteristics	CO2IntensityFactor	641.35	524
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	26.00
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50

tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50

2.0 Emissions Summary

2.2 Overall Operational
Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2612	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0500e-003	1.0500e-003	0.0000	0.0000	1.1200e-003
Energy	5.4800e-003	0.0498	0.0418	3.0000e-004		3.7900e-003	3.7900e-003		3.7900e-003	3.7900e-003	0.0000	330.6151	330.6151	0.0163	4.1600e-003	332.2474
Mobile	0.2608	0.5731	2.6029	6.0400e-003	0.4366	7.7400e-003	0.4443	0.1167	7.1300e-003	0.1239	0.0000	447.8298	447.8298	0.0175	0.0000	448.1980
Waste						0.0000	0.0000		0.0000	0.0000	11.1381	0.0000	11.1381	0.6582	0.0000	24.9612
Water						0.0000	0.0000		0.0000	0.0000	3.3268	18.8330	22.1598	0.3427	8.2800e-003	31.9253
Total	0.5275	0.6229	2.6453	6.3400e-003	0.4366	0.0115	0.4481	0.1167	0.0109	0.1276	14.4649	797.2790	811.7439	1.0349	0.0124	837.3330

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.2608	0.5731	2.6029	6.0400e-003	0.4366	7.7400e-003	0.4443	0.1167	7.1300e-003	0.1239	0.0000	447.8298	447.8298	0.0175	0.0000	448.1980

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	649.59	139.83	57.82	1,176,305	1,176,305
Total	649.59	139.83	57.82	1,176,305	1,176,305

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	276.3985	276.3985	0.0153	3.1600e-003	277.7008
NaturalGas Unmitigated	5.4800e-003	0.0498	0.0418	3.0000e-004		3.7900e-003	3.7900e-003		3.7900e-003	3.7900e-003	0.0000	54.2166	54.2166	1.0400e-003	9.9000e-004	54.5465

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	1.01598e+006	5.4800e-003	0.0498	0.0418	3.0000e-004		3.7900e-003	3.7900e-003		3.7900e-003	3.7900e-003	0.0000	54.2166	54.2166	1.0400e-003	9.9000e-004	54.5465
Total		5.4800e-003	0.0498	0.0418	3.0000e-004		3.7900e-003	3.7900e-003		3.7900e-003	3.7900e-003	0.0000	54.2166	54.2166	1.0400e-003	9.9000e-004	54.5465

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

General Office Building	1.16289e+006	276.3985	0.0153	3.1600e-003	277.7008
Total		276.3985	0.0153	3.1600e-003	277.7008

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.2612	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0500e-003	1.0500e-003	0.0000	0.0000	1.1200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0308					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2304					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0500e-003	1.0500e-003	0.0000	0.0000	1.1200e-003

Total	0.2612	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0500e-003	1.0500e-003	0.0000	0.0000	1.1200e-003
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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	22.1598	0.3427	8.2800e-003	31.9253

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	10.4863 / 6.42708	22.1598	0.3427	8.2800e-003	31.9253
Total		22.1598	0.3427	8.2800e-003	31.9253

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	11.1381	0.6582	0.0000	24.9612

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	54.87	11.1381	0.6582	0.0000	24.9612
Total		11.1381	0.6582	0.0000	24.9612

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Winchester Senior Housing Apartments (Construction Risk)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	63.00	Space	0.00	25,200.00	0
Unenclosed Parking Structure	42.00	Space	0.00	16,800.00	0
Apartments Low Rise	90.00	Dwelling Unit	1.86	140,464.00	257

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	524	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Land Use - Lot acreage and sf from project plan drawings.

Construction Phase - Approx. 12 month schedule

Off-road Equipment - Proposed equipment list provided by project applicant.

Off-road Equipment - Proposed equipment list provided by project applicant.

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Off-road Equipment - Proposed equipment list provided by project applicant.

Trips and VMT - Bldg constr: 50 cy cement (@ 16cy/truck) = 8 trips. Paving: 200 cy asphalt = 26 trips. Bldg Constr & Paving haul trips assumed to have vendor trip length. 0.5 mile trip lengths for near-site risk.

Demolition - 65,000 sf building demo

Construction Off-road Equipment Mitigation - Tier 2 engines for equipment >50hp, Tier 4 portable. BAAQMD BMPs.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	60.00
tblConstructionPhase	NumDays	4.00	10.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	PhaseEndDate	5/17/2017	12/29/2017
tblConstructionPhase	PhaseEndDate	11/22/2017	11/10/2017
tblConstructionPhase	PhaseEndDate	2/24/2017	2/15/2017

[illegible]

[illegible]

tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblVehicleTrips	ST_TR	7.16	3.44
tblVehicleTrips	SU_TR	6.07	3.44
tblVehicleTrips	WD_TR	6.59	3.44
tblWoodstoves	NumberCatalytic	0.45	0.00
tblWoodstoves	NumberNoncatalytic	0.45	0.00
tblWoodstoves	WoodstoveDayYear	10.82	0.00
tblWoodstoves	WoodstoveWoodMass	954.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.2726	1.2914	1.2786	1.6000e-003	0.0828	0.0845	0.1672	0.0310	0.0823	0.1133	0.0000	139.8156	139.8156	0.0222	0.0000	140.2814
Total	1.2726	1.2914	1.2786	1.6000e-003	0.0828	0.0845	0.1672	0.0310	0.0823	0.1133	0.0000	139.8156	139.8156	0.0222	0.0000	140.2814

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.1414	0.4743	1.2123	1.6000e-003	0.0396	0.0126	0.0522	7.8800e-003	0.0126	0.0205	0.0000	139.8154	139.8154	0.0222	0.0000	140.2812
Total	1.1414	0.4743	1.2123	1.6000e-003	0.0396	0.0126	0.0522	7.8800e-003	0.0126	0.0205	0.0000	139.8154	139.8154	0.0222	0.0000	140.2812

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.31	63.27	5.19	0.00	52.16	85.04	68.77	74.56	84.69	81.92	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/29/2017	2/10/2017	5	10	
3	Grading	Grading	2/2/2017	2/15/2017	5	10	
4	Building Construction	Building Construction	2/6/2017	11/10/2017	5	200	
5	Trenching	Trenching	2/16/2017	2/22/2017	5	5	
6	Architectural Coating	Architectural Coating	10/7/2017	12/29/2017	5	60	
7	Paving	Paving	11/12/2017	11/17/2017	5	5	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 284,440; Residential Outdoor: 94,813; Non-Residential Indoor: 26,334; Non-Residential Outdoor: 8,778 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	5	6.00	81	0.73
Demolition	Excavators	2	6.00	162	0.38
Demolition	Rubber Tired Dozers	1	6.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Excavators	2	6.00	162	0.38
Site Preparation	Graders	0	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	6.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Excavators	1	6.00	162	0.38
Grading	Graders	0	6.00	174	0.41
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Air Compressors	5	0.80	78	0.48
Building Construction	Cranes	1	0.80	226	0.29
Building Construction	Forklifts	1	0.80	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Trenching	Excavators	1	6.00	162	0.38
Trenching	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Architectural Coating	Air Compressors	5	8.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	0	6.00	125	0.42
Paving	Paving Equipment	1	6.00	130	0.36
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	10	25.00	0.00	296.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	7	82.00	17.00	8.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Architectural Coating	5	16.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	26.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0320	0.0000	0.0320	4.8400e-003	0.0000	4.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0409	0.3647	0.3024	4.3000e-004		0.0225	0.0225		0.0216	0.0216	0.0000	38.0500	38.0500	7.2500e-003	0.0000	38.2023
Total	0.0409	0.3647	0.3024	4.3000e-004	0.0320	0.0225	0.0545	4.8400e-003	0.0216	0.0265	0.0000	38.0500	38.0500	7.2500e-003	0.0000	38.2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3100e-003	3.9700e-003	0.0228	1.0000e-005	7.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.4751	0.4751	1.0000e-005	0.0000	0.4753
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	1.6000e-004	2.1700e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Total	1.9200e-003	4.1300e-003	0.0250	1.0000e-005	1.6000e-004	2.0000e-005	1.9000e-004	5.0000e-005	2.0000e-005	7.0000e-005	0.0000	0.6004	0.6004	2.0000e-005	0.0000	0.6008

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0144	0.0000	0.0144	1.0900e-003	0.0000	1.0900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2400e-003	0.1792	0.2752	4.3000e-004		5.4100e-003	5.4100e-003		5.4100e-003	5.4100e-003	0.0000	38.0499	38.0499	7.2500e-003	0.0000	38.2023
Total	9.2400e-003	0.1792	0.2752	4.3000e-004	0.0144	5.4100e-003	0.0198	1.0900e-003	5.4100e-003	6.5000e-003	0.0000	38.0499	38.0499	7.2500e-003	0.0000	38.2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	1.3100e-003	3.9700e-003	0.0228	1.0000e-005	7.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.4751	0.4751	1.0000e-005	0.0000	0.4753
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	1.6000e-004	2.1700e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Total	1.9200e-003	4.1300e-003	0.0250	1.0000e-005	1.6000e-004	2.0000e-005	1.9000e-004	5.0000e-005	2.0000e-005	7.0000e-005	0.0000	0.6004	0.6004	2.0000e-005	0.0000	0.6008

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0231	0.0000	0.0231	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3700e-003	0.0910	0.0719	8.0000e-005		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	7.8612	7.8612	2.4100e-003	0.0000	7.9118
Total	8.3700e-003	0.0910	0.0719	8.0000e-005	0.0231	4.6400e-003	0.0278	0.0125	4.2700e-003	0.0167	0.0000	7.8612	7.8612	2.4100e-003	0.0000	7.9118

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	3.0000e-005	4.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251

Total	1.2000e-004	3.0000e-005	4.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0104	0.0000	0.0104	2.8100e-003	0.0000	2.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0732	0.0565	8.0000e-005		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	7.8612	7.8612	2.4100e-003	0.0000	7.9118
Total	2.9000e-003	0.0732	0.0565	8.0000e-005	0.0104	2.0900e-003	0.0125	2.8100e-003	2.0900e-003	4.9000e-003	0.0000	7.8612	7.8612	2.4100e-003	0.0000	7.9118

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	3.0000e-005	4.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251
Total	1.2000e-004	3.0000e-005	4.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0251

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0100e-003	0.0760	0.0591	6.0000e-005		3.9000e-003	3.9000e-003		3.5900e-003	3.5900e-003	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586
Total	7.0100e-003	0.0760	0.0591	6.0000e-005	0.0234	3.9000e-003	0.0273	0.0125	3.5900e-003	0.0161	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	3.0000e-005	3.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0201	0.0201	0.0000	0.0000	0.0201
Total	1.0000e-004	3.0000e-005	3.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0201	0.0201	0.0000	0.0000	0.0201

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0105	0.0000	0.0105	2.8100e-003	0.0000	2.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1300e-003	0.0563	0.0414	6.0000e-005		1.5700e-003	1.5700e-003		1.5700e-003	1.5700e-003	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586
Total	2.1300e-003	0.0563	0.0414	6.0000e-005	0.0105	1.5700e-003	0.0121	2.8100e-003	1.5700e-003	4.3800e-003	0.0000	6.0199	6.0199	1.8400e-003	0.0000	6.0586

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	3.0000e-005	3.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0201	0.0201	0.0000	0.0000	0.0201
Total	1.0000e-004	3.0000e-005	3.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0201	0.0201	0.0000	0.0000	0.0201

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0307	0.2409	0.1646	2.7000e-004		0.0165	0.0165		0.0161	0.0161	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564
Total	0.0307	0.2409	0.1646	2.7000e-004		0.0165	0.0165		0.0161	0.0161	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.1000e-004	6.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0128	0.0128	0.0000	0.0000	0.0129
Vendor	0.0122	0.0412	0.1790	6.0000e-005	7.9000e-004	2.4000e-004	1.0400e-003	2.3000e-004	2.2000e-004	4.6000e-004	0.0000	4.9190	4.9190	7.0000e-005	0.0000	4.9205
Worker	0.0201	5.3100e-003	0.0713	6.0000e-005	3.0900e-003	9.0000e-005	3.1800e-003	8.3000e-004	8.0000e-005	9.1000e-004	0.0000	4.1102	4.1102	3.6000e-004	0.0000	4.1178
Total	0.0323	0.0467	0.2509	1.2000e-004	3.8800e-003	3.3000e-004	4.2200e-003	1.0600e-003	3.0000e-004	1.3700e-003	0.0000	9.0420	9.0420	4.3000e-004	0.0000	9.0511

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5600e-003	0.0574	0.1638	2.7000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564
Total	3.5600e-003	0.0574	0.1638	2.7000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	23.6758	23.6758	3.8400e-003	0.0000	23.7564

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.1000e-004	6.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0128	0.0128	0.0000	0.0000	0.0129
Vendor	0.0122	0.0412	0.1790	6.0000e-005	7.9000e-004	2.4000e-004	1.0400e-003	2.3000e-004	2.2000e-004	4.6000e-004	0.0000	4.9190	4.9190	7.0000e-005	0.0000	4.9205
Worker	0.0201	5.3100e-003	0.0713	6.0000e-005	3.0900e-003	9.0000e-005	3.1800e-003	8.3000e-004	8.0000e-005	9.1000e-004	0.0000	4.1102	4.1102	3.6000e-004	0.0000	4.1178
Total	0.0323	0.0467	0.2509	1.2000e-004	3.8800e-003	3.3000e-004	4.2200e-003	1.0600e-003	3.0000e-004	1.3700e-003	0.0000	9.0420	9.0420	4.3000e-004	0.0000	9.0511

3.6 Trenching - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2700e-003	0.0132	0.0109	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	1.4620	1.4620	4.5000e-004	0.0000	1.4714
Total	1.2700e-003	0.0132	0.0109	2.0000e-005		8.0000e-004	8.0000e-004		7.4000e-004	7.4000e-004	0.0000	1.4620	1.4620	4.5000e-004	0.0000	1.4714

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2700e-003	6.2700e-003	0.0000	0.0000	6.2800e-003

Total	3.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2700e-003	6.2700e-003	0.0000	0.0000	6.2800e-003
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.6000e-004	0.0141	0.0119	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.4620	1.4620	4.5000e-004	0.0000	1.4714
Total	6.6000e-004	0.0141	0.0119	2.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	1.4620	1.4620	4.5000e-004	0.0000	1.4714

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2700e-003	6.2700e-003	0.0000	0.0000	6.2800e-003
Total	3.0000e-005	1.0000e-005	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2700e-003	6.2700e-003	0.0000	0.0000	6.2800e-003

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0803					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0665	0.4370	0.3736	5.9000e-004		0.0347	0.0347		0.0347	0.0347	0.0000	51.0651	51.0651	5.3900e-003	0.0000	51.1783
Total	1.1468	0.4370	0.3736	5.9000e-004		0.0347	0.0347		0.0347	0.0347	0.0000	51.0651	51.0651	5.3900e-003	0.0000	51.1783

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	3.1000e-004	4.1700e-003	0.0000	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2406	0.2406	2.0000e-005	0.0000	0.2410
Total	1.1700e-003	3.1000e-004	4.1700e-003	0.0000	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2406	0.2406	2.0000e-005	0.0000	0.2410

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	1.0803					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9400e-003	0.0258	0.3665	5.9000e-004		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	51.0650	51.0650	5.3900e-003	0.0000	51.1782
Total	1.0863	0.0258	0.3665	5.9000e-004		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	51.0650	51.0650	5.3900e-003	0.0000	51.1782

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	3.1000e-004	4.1700e-003	0.0000	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2406	0.2406	2.0000e-005	0.0000	0.2410
Total	1.1700e-003	3.1000e-004	4.1700e-003	0.0000	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2406	0.2406	2.0000e-005	0.0000	0.2410

3.8 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0172	0.0130	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.7100e-003	0.0172	0.0130	2.0000e-005		1.1200e-003	1.1200e-003		1.0300e-003	1.0300e-003	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.5000e-004	2.0000e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0417	0.0417	0.0000	0.0000	0.0418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	1.0000e-005	1.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100
Total	1.6000e-004	3.6000e-004	2.1700e-003	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0518	0.0518	0.0000	0.0000	0.0518

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	0.0169	0.0138	2.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.0000e-004	0.0169	0.0138	2.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	1.6955	1.6955	5.2000e-004	0.0000	1.7064

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.5000e-004	2.0000e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0417	0.0417	0.0000	0.0000	0.0418
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	1.0000e-005	1.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0100	0.0100	0.0000	0.0000	0.0100
Total	1.6000e-004	3.6000e-004	2.1700e-003	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0518	0.0518	0.0000	0.0000	0.0518

Santana Atrium Senior Apts, Santa Clara, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m ²)	DPM Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2017	Remediation	0.0126	DTSC_DPM	25.2	0.0077	9.67E-04	7,071	1.37E-07

hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions			Modeled Area (m ²)	PM2.5 Emission Rate g/s/m ²
				(lb/yr)	(lb/hr)	(g/s)		
2017	Remediation	DTSC_FUG	0.0079	15.8	0.00480	6.04E-04	7,071	8.55E-08

hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

Santana Atrium Senior Apts, Santa Clara - Health Impacts Summary

Remediation Year	Maximum Concentrations					
	Exhaust PM2.5/DPM (µg/m ³)	Fugitive PM2.5 (µg/m ³)	Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m ³)
			Child	Adult		
2015	0.0479	0.0535	4.2	0.2	0.010	0.101

Santana Atrium Senior Apts, Santa Clara
Maximum DPM Cancer Risk Calculations From Construction Activities
Off-Site Residential Receptor Locations - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10⁻⁶ / AT

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

ED = Exposure duration (years)

AT = Averaging time period over which exposure is averaged.

10⁻⁶ = Conversion factor

Values

Parameter	Child	Adult
CPF =	1.10E+00	1.10E+00
DBR =	581	302
A =	1	1
EF =	350	350
AT =	25,550	25,550

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Child - Exposure Information			Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
				Exposure Adjust Factor		Modeled		Exposure Adjust Factor			
		DPM Conc (ug/m3)				DPM Conc (ug/m3)					
		Year	Annual			Year	Annual				
1	1	2015	0.0479	10	4.19	2015	0.0479	1	0.22	0.0535	0.101
2	1		0.0000	10	0.00		0.0000	1	0.00		
3	1		0.0000	4.75	0.00		0.0000	1	0.00		
4	1		0.0000	3	0.00		0.0000	1	0.00		
5	1		0.0000	3	0.00		0.0000	1	0.00		
6	1		0.0000	3	0.00		0.0000	1	0.00		
7	1		0.0000	3	0.00		0.0000	1	0.00		
8	1		0.0000	3	0.00		0.0000	1	0.00		
9	1		0.0000	3	0.00		0.0000	1	0.00		
10	1		0.0000	3	0.00		0.0000	1	0.00		
11	1		0.0000	3	0.00		0.0000	1	0.00		
12	1		0.0000	3	0.00		0.0000	1	0.00		
13	1		0.0000	3	0.00		0.0000	1	0.00		
14	1		0.0000	3	0.00		0.0000	1	0.00		
15	1		0.0000	3	0.00		0.0000	1	0.00		
16	1		0.0000	3	0.00		0.0000	1	0.00		
17	1		0.0000	1.5	0.00		0.0000	1	0.00		
18	1		0.0000	1	0.00		0.0000	1	0.00		
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65	1		0.0000	1	0.00		0.0000	1	0.00		
66	1		0.0000	1	0.00		0.0000	1	0.00		
67	1		0.0000	1	0.00		0.0000	1	0.00		
68	1		0.0000	1	0.00		0.0000	1	0.00		
69	1		0.0000	1	0.00		0.0000	1	0.00		
70	1		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk					4.2				0.2		